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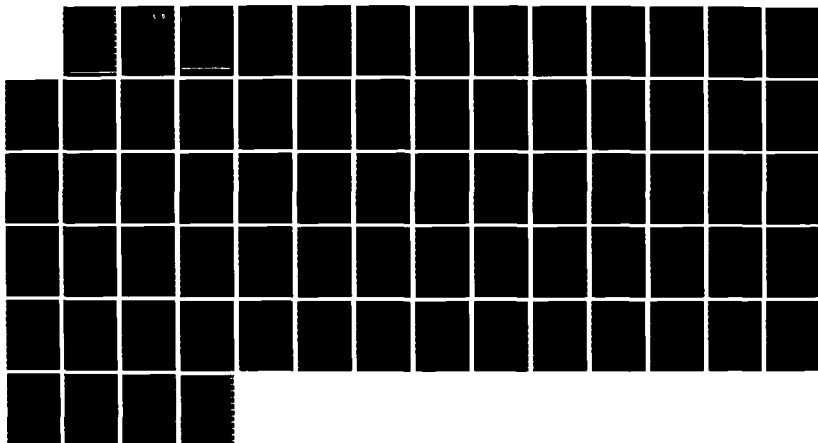
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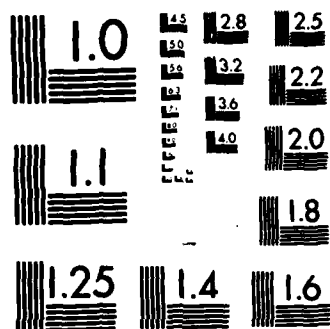
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LAND-BASED AIR IN A NATIONAL MARITIME STRATEGY:
THE NEED FOR A JOINT STRATEGIC DOCTRINE

by

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30 May 1986

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EXECUTIVE SUMMARY

This paper examines the role of land-based air power within a national maritime strategy. Corbett taught that naval strategy is a subsidiary aspect of national maritime strategy, and that sea control is its objective. Since then, the growing capability of the airplane and the missile have made air power an increasingly crucial factor in sea control. In fact, air and sea control are both essential in a working maritime strategy. Due to the increasing speed, range, and accuracy of aircraft, weapons, detection, and communications, an important part of maritime air control will be land-based.

The Navy has developed an immensely capable air arm, and the Air Force has typically focused on land targets. But while Air Force Manual 1-1 defines most Air Force missions in land support terms, those missions have important maritime aspects as well. The Air Force and Navy are taking steps to integrate their forces, but largely at operational and command levels. U.S. maritime strategy, viewed geographically and chronologically as integrated, progressive, flexible, and anticipatory, is best constructed realizing the potential contribution of land-based air to a national maritime strategy, and the possible consequences of poor integration.

True strategic integration can only occur if we evolve a national strategic doctrine which teaches us not what to think, but how. From that joint strategic doctrine will flow service strategic doctrines, theater strategies, and joint operational doctrines which allow the best possible integration of land-based air into a national maritime strategy.

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**LAND-BASED AIR IN A NATIONAL MARITIME STRATEGY:
THE NEED FOR JOINT STRATEGIC DOCTRINE**

CHAPTER I

INTRODUCTION

There are legitimate differences within and among the services. There are also self-serving and parochial differences. When the latter predominate, civilians are apt to exercise control in an arbitrary manner.¹

Admiral Henry E. Eccles, 1979

Since Billy Mitchell's 1921 air attacks on naval vessels, America's Navy and Air Force have been at odds. Throughout the budget and force structure battles following World War II, the services have continued to struggle over who should fight, where they should fight, and how they should fight. The growth of the Navy's carrier-based air arm has seemingly complemented the Air Force's concentration on land operations in support of the U.S. Army; but the recent surge of interest in, on the one hand "the Maritime Strategy," and on the other "the AirLand Battle," has emphasized the two major directions of contemporary U.S. military strategy. It has likewise brought into question the role of the Air Force's land-based air in a national maritime strategy.

That question has two basic components: one of need, and the other of capability. If the Navy already has its

own air arm, why should the Air Force concern itself with maritime operations? And even if given a need, what can the Air Force actually contribute to the national defense in flying and fighting over the world's oceans? More broadly, these questions address the coherence of national defense planning as the military prepares to fight a war which, at its most extensive, will be simultaneously continental and maritime.

The Air Force has indeed inherited a maritime component among its official missions. But that maritime component is termed collateral rather than primary. The history of the way functions were assigned and described is a fascinating study in interservice competition for roles and resources.² But the importance of the collateral functions given to the Air Force has for some time now been understated--due perhaps in part to the seemingly "secondary" or "left-over" connotations of the word collateral. This devaluation, however, may prove a significant mistake. Given the nature of the war we may end up fighting, and in fact given the nature of both the threat we face and the context in which we face it, these collateral functions may prove vital to the national defense--may in fact prove "primary."

There are certainly many problems which keep us from fully integrating our forces to better support a national maritime strategy. Because some of those problems are conceptual and not just organizational and budgetary, this

study treats the concept of land-based air as the counterpart to sea-based or carrier-based air. Although all the services operate aircraft from land bases, the greatest proportion of land-based air is controlled by the Air Force. And in bringing its land-based air into maritime operations, the Air Force becomes a member of a vital maritime defense team. As Bradley says, "This is not a matter of the Air Force helping the Navy and the Marine Corps; it is a matter of the Air Force, Navy, and Marine Corps working together, over water as they have over land, in pursuit of national objectives."³

This study examines the possibilities of better integrating land-based and sea-based air in support of a national maritime strategy, and of achieving that heightened integration by adopting a general theory of national military strategy. "Strategy," according to Eccles, "is the comprehensive direction of power to control situations and areas to attain broad objectives."⁴ This is the definition of strategy used throughout the study; and a general theory of such strategy, or what is in essence a joint strategic doctrine, will lead to a more effective use of land-based air in pursuit of sea control.

To evaluate these possibilities, we must first understand the unity of sea control and air control; examine the Air Force missions which affect sea control; discuss the strategic concerns directing land-based air in maritime

strategy; and understand why joint strategic doctrine will better integrate our military forces.

CHAPTER II

SEA CONTROL AND AIR CONTROL: AN INEVITABLE UNITY

'Twixt the green sea and the azured vault
Set roaring war.

William Shakespeare
The Tempest, Act V, Scene i

Granting the same aggregate of force, it is never
as great in two hands as in one, because it is not
perfectly concentrated.¹

Alfred Thayer Mahan, 1911

Over the past five years much has been written
concerning "the Maritime Strategy." Often spelled with
capital letters and based, its detractors would claim, on a
need for capital ships, it has given rise to a recent flurry
of claim and counterclaim which sometimes obscures the fact
that the concept of maritime strategy is not new, and that
earlier views were not identical to our present view.²

Amidst the debate, perhaps the clearest examination of
essential maritime strategy is to be found in the writings
of Sir Julian Corbett. His analysis of naval strategy is
based firmly on the larger framework of Clausewitz's
thoughts on war; and he begins his work by asking why we
need a maritime strategy, in terms of the larger definition
of war as "an act of violence to compel our opponent to do
our will."³ War for Corbett, as for Clausewitz, serves a
nation's political objectives; and any useful theory on war
must start with that realization.

Having started from first principles, Corbett proceeds initially to differentiate between continental and maritime strategy, and then to subordinate naval strategy to maritime strategy. "By maritime strategy," he writes, "we mean the principles which govern a war in which the sea is a substantial factor. Naval strategy is but that part of it which determines the movements of the fleet when maritime strategy has determined what part the fleet must play in relation to the action of the land forces; for it scarcely needs saying that it is almost impossible that a war can be decided by naval action alone."⁴ By Corbett's reasoning, naval strategy is a part of the larger maritime strategy--much as are a nation's merchant fleet, its geographical advantages, and its political ties with other maritime nations.⁵

For Corbett, then, naval theory and military theory are separated only by the physical media in which they operate and the methods best used in their respective media. But above all, these two branches of theory are complementary parts of a larger theory of war, a theory "which regards the fleet and army as one weapon, which coordinates their action, and indicates the lines on which each must move to realize the full power of both."⁶ Above all, the army must finally occupy or be capable of occupying enemy territory if the nation is to win the war. Thus for Corbett, "the question for the Army was 'What can the Navy enable us to

do?' while for the Navy the question was 'What does the Army want us to do?'"⁷

While there is certainly no need to trace here the development of air power as a third force operating in a new medium, modern extensions of Corbett's views on maritime strategy must deal with this third force. For just as Corbett always saw one arm operating in the overall context of the other, so air must be seen in the context of both other media. And even as Corbett begins with a basic definition of naval power as a constituent of maritime strategy, so must we examine the modern constituents of a successful maritime strategy.

From the very start, Corbett bases his analysis upon a clear understanding of ends and means. And if the end of war is political, the working objective of naval warfare "must always be directly or indirectly to secure the command of the sea or to prevent the enemy from securing it."⁸ Sea control, then, is the essential foundation of any maritime strategy, regardless of its particular goals. And sea control, or Corbett's "command of the sea," is finally "nothing but the control of maritime communications, whether for commercial or military purposes."⁹

Maritime communications in the late twentieth century, however, are a different matter than they were at the turn of the century. Since Corbett proposed his "principles," time and distance have changed considerably for all

intercultural exchange, most crucially for that violent exchange we call war. Thus the age-old distinction between sea warfare and land warfare has been blurred, if not totally erased, by our newly acquired ability to project explosive power anywhere on the globe within minutes. And a fundamental variable in that exchange is the medium through which we now project power so widely and so rapidly--air.

The change is, of course, a difference in degree rather than kind. In the eighteenth century, bullets traveled through the air, and to a more distant and deadly degree, so did cannonballs. Now our modern artillery, both land and sea-based, includes the missile--from the point defense SAM, to the multiple warhead ICBM. And not only have we increased speed and accuracy, but flexibility as well. The use of piloted aircraft allows human intelligence a broad range of decisions during flight, and so pilots have expanded the roles that airborne weapons can play in wars over both land and sea. This expansion has been so extensive, in fact, that what is a difference in degree often appears to be a difference in kind; thus we have called air power and aerial warfare new modes of warfare. And so we have accorded to air a form of equality with the ancient media--land and sea. And that view is proper, not only for reasons of traditional divergence, but because of the growth of air theory.

But a subtle trap lies in wait for the modern strategist who thinks in terms of land warfare, sea warfare, and air warfare. He may, out of regard for the different media, think in terms of media-based strategies rather than, as Corbett advised, strategies which view the armed forces "as one weapon."¹⁰

Because air overlays the land, air power unites with ground units to form the team which in Corbett's day would have enacted continental strategy, and which in our day fights the AirLand Battle. And because air overlays the sea, any useful maritime strategy must integrate sea and air forces to control maritime communications--without regard to such artificial distinctions as the point of origin of the aircraft involved. Of course planners must consider the capabilities of those aircraft, the limitations of their weapons systems, and the training of their pilots, as they formulate maritime strategy. But limitations are often placed on these aircraft, systems, and pilots not by necessary differences between over-sea and over-land flight, but rather by decisions of omission or tradition or even bureaucratic rivalry in equipping and training our forces.

Sometimes, of course, such decisions can result from outright mistakes in reading the potential capabilities of new technology. General Billy Mitchell demonstrated that an aircraft could sink an anchored battleship, and generalized from that demonstration the broad claim that "aircraft

dominate seacraft."¹¹ For Mitchell, the aircraft was indeed the new instrument of sea control. But he seriously miscalculated the potential of carrier-based air in fulfilling this new mission: "As airplanes carrying vessels are of no use against hostile air forces with bases on shore," he claimed, "and as they can only be of use against other vessels or hostile fleets that are on the surface of the water, and as these fleets will be supplanted by submarines, there is little use for the retention of airplane carriers in the general scheme of armaments."¹² Mitchell's claim generated violent objections, and history has vindicated those who struggled to retain the carriers.

But while Mitchell vastly underestimated the role sea-based air was to play in the next sixty years, he was right about the interrelationship of sea control and air control, and about the especially lethal role air power would play in sea control.

More recent naval theorists, too, are quick to link air and sea control in filling the niche occupied by sea control alone in Corbett's day. H.W. Richmond sees aircraft as "instruments of sea power; weapons employed at sea for the purpose of disputing the control of the sea, which is the object of sea power."¹³ L.W. Martin observes that "submarine, aircraft and missile have become the most dangerous enemies of the larger surface ships."¹⁴ And Geoffrey Till projects that "any future battle at sea would

be a particularly diverse affair of sub-surface, air and surface engagements (probably in that order of respective lethality)."¹⁵

Admiral Stansfield Turner calls for "a traditional maritime strategy where control of the sea lanes and of the air lanes above them is a primary focus."¹⁶ "Plentiful air power at sea is one of the cardinal requirements of good sea control tactics," Turner warns.¹⁷ But he further points out the weaknesses and vulnerabilities of the modern super carrier in maintaining that aerial sea control.¹⁸ And if future budget cuts force shifts from large to smaller carriers, or if future battle damage cuts into the number of carriers available, the aerial aspect of sea control may well shift somewhat toward land-based aircraft.

Air control and sea control, then, work together as a necessary unity in ensuring the effectiveness of any national maritime strategy. And as we shall see in the next chapter, land-based air has the capability of ensuring an important portion of maritime air control.

CHAPTER III

AIR FORCE MARITIME MISSIONS

It will be seen that the period of keeping the dominance gained at sea tends to shorten and the struggle for gaining it becomes even tougher.¹

Sergei G. Gorshkov, 1979

If the Navy already has its own sea-based air arm, what maritime missions should land-based air--particularly the U.S. Air Force--join in accomplishing? From air superiority or counterair actions, to ship attack or antisurface warfare, maritime missions for land-based air fall along the entire spectrum of wartime roles for airpower.

Air Force Manual 1-1, Basic Aerospace Doctrine of the United States Air Force, is a particularly useful place to start in examining those missions.² The 9 September 1982 "Memorandum of Agreement On Joint USN/USAF Efforts to Enhance USAF Contribution to Maritime Operations" further lists important areas of mutual capability. And though a proposed JCS publication on "Joint Maritime Operations (Air)" is not yet available, it may eventually present the best description of integrated air missions in support of maritime operations.³

In listing and describing Air Force missions, AFM 1-1 clearly states that air commanders may accomplish their

missions in coordination "with other Service forces."⁴

These missions are:

Strategic Aerospace Offense

Strategic Aerospace Defense

Counter Air

Air Interdiction

Close Air Support

Special Operations

Airlift

Aerospace Surveillance and Reconnaissance

Aerospace Maritime Operations

The Air Force begins its list with "Strategic Aerospace Offense" and "Strategic Aerospace Defense"--two missions which, though sensibly described to include attacks on the enemy's key military, political, and economic power bases, are unfortunately mistitled. In a pertinent study of the Luftwaffe's strategic failure in World War II, Williamson Murray argues that "the use of the word strategic by airpower enthusiasts to connote a particular form of bombing distorts the classical meaning of the word."⁵ Here, in the broad sense, any range of operations designed to enhance sea control, or to deny enemy movements toward sea control, is strategic. Therefore, while each of the following missions is at the immediate level tactical or operational, each is also strategic as it touches on the nation's ability to wage war successfully.⁶

The following missions, then, deserve further study as possible Air Force contributions to maritime air and sea control:

1. COUNTER AIR objectives are to gain control of the aerospace environment. Counter air operations protect friendly forces, ensure our freedom to use the aerospace environment to perform our other missions and tasks, and deny the use of that environment to an enemy. The ultimate goal of counter air is air supremacy.

Since sea control and air control are an inevitable unity in the maritime environment, then the Navy's anti-air warfare (AAW) and the Air Force's counter-air mission are substantially the same. In fact, both Navy and Air Force planners recognize that fact in the September 1982 MOA: "Evaluation of [recent] operations and assessment of the current threat indicated the Anti-Air Warfare (AAW)/Counter-Air Operations is the mission area in which Air Force capabilities can provide the most immediate gains to maritime operations."⁷

In seeking air supremacy, AFM 1-1 goes on to subdivide counter-air into three overlapping missions:

- a. Offensive Counter Air (OCA). Aerospace operations conducted to seek out and neutralize or destroy enemy aerospace forces at a time and place of our own choosing. These operations are essential to gaining aerospace superiority and providing the favorable situation which allows us to perform our other missions. Offensive counter air is designed to secure this situation by seizing the offensive at the initiation of hostilities, conducting operations in the enemy's aerospace environment, and neutralizing or destroying the enemy's aerospace forces and the infrastructure supporting his aerospace operations.

This mission, though termed offensive, is at once offensive and defensive. The defensive utility of proactive air strikes against enemy bases, radars, and communications networks is readily apparent in the case of maritime operations against an enemy whose naval air arm is largely land-based. And just as pertinent are strikes against ships and submarines capable of launching deadly missiles from a respectable standoff range. In both cases, the usefulness of land-based air in a maritime environment is limited only by range, weapons, and training--although perhaps pilot experience might be a better indicator of capability. But a further limit on integrated OCA is the degree to which Air Force and Navy operational procedures, terminologies, and mission planning coincide.⁸

b. **Suppression of Enemy Air Defenses (SEAD).** Aerospace operations which neutralize, destroy, or temporarily degrade enemy air defensive systems in a specific area by physical and/or electronic attack. The goal of SEAD operations is to provide the favorable situation which allows friendly aerospace forces to perform their other missions effectively without interference from enemy air defenses.

This mission is an essential part of any maritime attack, whether on strongly defended enemy naval targets or on shore targets. One crucial situation demanding the most effective possible mix of land and sea-based SEAD would occur as Marine, Navy, and Air Force air prepare a well-

defended enemy coastal area for U.S. Marine amphibious assault⁹; and in an inverse situation, land and sea-based air might be required to suppress enemy air defenses during a preemptive raid on an enemy harbor, inside of which preparations were ongoing for an amphibious assault upon friendly territory. In either case, circumstances of numerical superiority and technical capability would dictate numbers and mix of aircraft; but the need for a substantial blend of land and sea-based air is more likely than not.

c. **Defensive Counter Air (DCA).** Aerospace operations conducted to detect, identify, intercept, and destroy enemy aerospace forces that are attempting to attack friendly forces or penetrate friendly airspace. These operations defend friendly lines of communications, protect friendly bases, and support friendly land and naval forces while denying the enemy the freedom to carry out offensive operations.

Land-based air would serve most directly here in protecting navy ships (and aircraft), as well as convoys and other shipping, from land-based air attack. While no one questions the carrier battle group's ability to defend itself from enemy air attack, land-based air defense barriers would disrupt and weaken enemy massed air attacks such that naval point defense tactics would be that much more effective.¹⁰ And certainly the advanced warning afforded by the land-based E-3A Airborne Warning and Control System (AWACS) would serve two functions. It would alert

the battle group early, and it would enable the land-based barrier defense to meet the enemy attack in strength.

While Navy and Air Force planners have cooperated in integrating AWACS and F-15 capabilities into carrier battle group operations, different procedures, terminology, equipment, and background could hinder that integration. And of course nothing can take the place of stressful and imaginative exercises, designed both to raise the level of joint proficiency, and to check that proficiency against realistic threats.¹¹

One further need exists, and that is the requirement for air cover over the newly activated battleship battle groups. While the battleship and its attendant cruisers and destroyers will wield a formidable air defense on their own, Navy Secretary Lehman has testified that the battleship "has got to have air cover from either a carrier or, for instance in the Caribbean, Air Force cover with AWACS and F-15s."¹² Where that land-based air cover is necessary, it must be well integrated into the battle group's defensive procedures.

2. **AIR INTERDICTION (AI)** objectives are to delay, disrupt, divert, or destroy an enemy's military potential before it can be brought to bear effectively against enemy forces. These combat operations are performed at such distances from friendly surface forces that detailed integration of specific actions with the fire and movement of friendly forces is normally not required. Air interdiction attacks are usually executed against enemy surface forces, movement networks (including lines of communication), command,

control, and communications networks, and combat supplies. Interdiction of the enemy can delay the arrival or buildup of forces and supplies, disrupt the enemy's scheme of operation and control of forces, divert valuable enemy resources to other uses, and destroy forces and supplies.

In two following paragraphs, air interdiction is shown to be most often coordinated with a "surface force commander." And of course that "surface" is implicitly taken to mean a land warfare surface. But in maritime and amphibious environments, air interdiction of enemy supply and distribution centers, supply ships, communications centers and lines, amphibious buildups, and assembling movements can have the same positive effects as in a land environment; and these targets will very likely be well within range of friendly land bases, possibly during a period when limited carrier air is deployed elsewhere. Maritime air interdiction may in some important respects differ from land air interdiction, but the need is nonetheless substantial.

3. CLOSE AIR SUPPORT objectives are to support surface operations by attacking hostile targets in close proximity to friendly surface forces. Close air support can support offensive, counter-offensive, and defensive surface force operations with preplanned or immediate attacks. All preplanned and immediate close air support missions require detailed coordination and integration with the fire and maneuver plans of friendly surface forces. Close air support missions require access to the battlefield, timely intelligence information, and accurate weapons delivery.

The most important applications of close air support to maritime requirements are in the two cases of amphibious operations: mounting them, and defending against them. Certainly Marine air, working within the well-coordinated Marine Air Ground Task Force (MAGTF), demonstrates the importance of this mission in the first case. In the second, it is conceivable that Air Force and Navy air might be called upon to bolster army or even home guard forces defending against an enemy amphibious assault in, for instance, Denmark or Japan. The further seaward from the beach our close air support could operate, the more effective that support would be in blunting the attack.

4. SPECIAL OPERATIONS objectives are to influence the accomplishment of strategic or tactical objectives normally through the conduct of low visibility, covert, or clandestine military actions. Special operations are usually conducted in enemy controlled or politically sensitive territories and may complement general purpose force operation. . . . To execute special operations, forces are normally organized and employed in small formations capable of both supporting actions and independent operations, with the purpose of enabling timely and tailored responses throughout the spectrum of conflict. Special operations forces may conduct and/or support unconventional warfare, counterterrorist operations, collective security, psychological operations, certain rescue operations, and other mission areas such as interdiction or offensive air operations.

Just as published descriptions of current U.S. maritime strategy call for capability along the entire spectrum of conflict, so must joint sea and land-based air, or upon occasion land-based air alone, be prepared to succeed in

special maritime operations--such as the recent joint Navy and Air Force air strike on Libya. While such operations may not have such immediately drastic consequences as a large-scale conventional war, they are proving far more likely; and the accumulated results will in the long term profoundly affect U.S. interests.

5. AIRLIFT objectives are to deploy, employ, and sustain military forces through the medium of aerospace . . . [by] the timely movement, delivery, and recovery of personnel, equipment, and supplies, furthering military and national goals.

In regions where sea control is even partially dependant upon land-based air control, such as in the Norwegian Sea and the Sea of Japan, airlift is vital to supplying and rapidly moving the troops which help hold those sea control air bases. And of course airlift augments the larger carrying capacity of sea transport for the task of resupplying Europe or Japan during global war. Though such airlift is not as efficient as sea transport, it is faster and, in a worst case, massively available by mobilizing commercial air transport.¹³

6. AEROSPACE SURVEILLANCE AND RECONNAISSANCE objectives are to collect information from airborne, orbital, and surface-based sensors. Air Force surveillance and reconnaissance efforts are a part of our national intelligence gathering and systematic observation process. These operations provide a wide variety of information that is key to the development of national security policy, force postures, planning actions, force employment, and informed responses in times of crisis.

This mission, in its maritime form, has come to be called sea surveillance; and under that rubric, the Air Force has developed a wide-ranging capability to monitor sea surface activity with a variety of satellite and aircraft. Perhaps the most well known Air Force program for sea surveillance is the Strategic Air Command's "Busy Observer" program, employing B-52s for long-range missions over open ocean in search of enemy ship formations.¹⁴ Other aircraft including the F-111 and the RF-4C, while limited in range, also combine visual and electronic sensors to perform an essential maritime surveillance mission.¹⁵

Land-based AWACS, mentioned above in Defensive Counter Air, is unarguably a vital part of maritime electronic surveillance and reconnaissance; and given the strategic importance of maintaining sea and air control forward of our vital sea lanes during a prolonged global conflict, the AWACS allows a more secure naval presence within reach of land-based air opposition.

7. AEROSPACE MARITIME OPERATIONS objectives are to neutralize or destroy enemy naval forces and to protect friendly naval forces and shipping. Aerospace maritime operations may consist of counter air operations, aerial minelaying, reconnaissance and surveillance, and interdiction of enemy naval surface and subsurface forces, port facilities, and shipping. Although composed of certain aspects of other aerospace missions, this mission is made unique primarily by the character of its objectives, the threat, and the forces involved. Aerospace maritime operations may be performed unilaterally or in coordination with friendly

naval forces, integrating the unique capabilities of aerospace and naval forces in operations against a common threat or in the accomplishment of a common objective.

In identifying certain missions which might happen at sea, and in then labelling them "maritime," AFM 1-1 artificially separates out portions of the fundamental missions described earlier, segregating them by virtue of the fact that they are performed over water. No other mission is defined strictly by the nature of the earth's surface underneath during its performance, nor should this category exist based only on this quality. However, several areas mentioned within the paragraph do merit special attention due to the nature of the operations themselves. These missions are aerial minelaying and anti-surface warfare.

a. **AERIAL MINELAYING** is closely related to both the strategic and tactical bombing missions of AFM 1-1, and may be accomplished in enemy, neutral, or friendly waters. Offensive mining is calculated to disrupt, and if possible to deny, the enemy's shipping into and out of his home ports. Defensive mining aids in the quest for sea control by placing additional pressures upon enemy naval and merchant vessels in international or contested waters such as straits or passages. And protective mining aims at safeguarding our own shipping from enemy attack by laying down selective (and precise) barriers around home waters.¹⁶

Aerial mining, then, is an effective extension of strategic bombing into a maritime environment, because it denies the enemy necessary transport and supplies and thus weakens his ability to continue the war effort. During World War II, Operation Starvation closed off Japan's home waters by means of B-29 mining, proving the potential effect of this form of maritime (and delayed) strategic bombing.¹⁷

Because of the vast surface areas involved in effective mining campaigns, the mining aircraft must be able to carry a huge volume of mines and deliver them swiftly and accurately--especially if flying through an area where sea and air control are contested.

The more hostile the environment, the more quickly and evasively the mining must be accomplished. In a less threatening area, by contrast, we may trade that speed for carrying capacity--leading eventually to a Cargo Airlift Minelaying System (CAMLs) as a cheap, high volume delivery system for defensive and protective mining.¹⁸ But from high speed to high volume missions, minelaying is a natural and effective mission for land-based air in maritime operations.

b. **ANTI-SURFACE WARFARE**, or anti-ship warfare, takes its historical impetus from the maritime bombing experiments of Billy Mitchell, and it remains today one of the most immediately crucial missions of maritime air power. As an exercise in sea control, aerial anti-surface warfare is particularly effective because of the speed and flexibility

of the attacking aircraft. These aircraft, however, are highly vulnerable at close range to the effective point defenses of modern naval surface action groups.

Thus while land-based aircraft can theoretically control crucial sea areas within their striking range, and while that range can be appreciably extended with refueling, the practical matter of proper standoff attack weapons, effective tactics, and ship attack experience would be vital in ensuring that sea control ability. In addition, a truly effective anti-surface capability would exploit land-based AWACS capabilities in maritime detection and targeting, effectively linked with sea and land-based strike aircraft, to attack enemy naval groups in strength while countering the protective reactions of enemy naval air.¹⁹

In their 9 September 1982 Memorandum of Agreement, the Navy and the Air Force service chiefs agreed that among other things, "the Air Force will also improve its anti-ship capability in support of the Antisurface Ship Warfare (ASUW) mission."²⁰ And in a 25 October 1982 Memorandum, the chiefs and service secretaries further agreed to improve joint anti-surface capabilities by increasing "cooperation in improving tactical weapons effectiveness," "interservice use of existing tactical weapons ranges and facilities for training and exercising," and "cooperation in interoperable command, control, and communications equipment and procedures."²¹ Such cooperation must be not only planned,

but actively and realistically exercised, if land-based air is to have an appreciable effect in future anti-surface warfare.²²

"Aerospace Maritime Operations," then, is the final item on the AFM 1-1 list of Air Force missions. But following that section, the manual lists additional "Air Force Specialized Tasks" as follows:

Aerial Refueling

Electronic Combat

Warning, Command, Control, and Communication

Intelligence

Aerospace Rescue and Recovery

Psychological Operations

Weather Service

Rather than examine each task in detail for its maritime implications, let me simply mention the special utility of aerial refueling in extending the maritime impact of both land and sea-based air; the ability of AWACS to strengthen the anti-air warfare capability of carrier or battleship battle groups; and the crucial nature of interservice intelligence in joint targeting and assessment.

The missions defined in "Basic Aerospace Doctrine of the United States Air Force" are broadly applicable in a maritime environment. And the U.S. Navy and Air Force have begun the process of integrating these land-based air capabilities into maritime operations by establishing

working groups in several areas identified in the September 1982 Memorandum of Agreement.²³ These committees are currently working in the areas of command, control, communications, and electronic warfare; joint exercising; training and personnel initiatives; tactical ranges; tactical doctrine; surveillance, indications, and warning; aerial refueling; research, development, testing, and evaluation; intelligence; and the B-52 and Harpoon missile program.²⁴ Such initial cooperation is encouraging.

But in order for national defense thinkers to fully realize the maritime capabilities of land-based air most effectively in their strategic plans, they must match operational capabilities against the larger context of the entire spectrum of conflict. We may accomplish limited operational integration by means of bilateral agreements between services, or more extensive command or alliance agreements and procedures. But unless those who plan our strategies and prepare our forces at the national level understand the needs for and capabilities of land-based air within a larger strategic framework, we may well face the prospect of piecemeal and disjointed integration.

CHAPTER IV

STRATEGIC CONCERNS

Everything in war is simple, but the simplest thing is difficult.¹

Carl von Clausewitz, 1832

Understanding the capabilities of land-based air in maritime operations is one thing. But understanding the strategic concerns involved in planning and employing land-based air in national maritime strategy is quite another. It may seem a simple matter to come up with a national military strategy which uses all forces fairly and appropriately. In fact, however, strategic thinking, however integrative its intent, is inevitably influenced by the limitations of the physical world as much as the possibilities of the intellectual world.

One of the problems facing the strategist is the need to adopt an intellectual framework, or a set of related variables which influence war and direct strategic thinking in the physical world. Clausewitz, for example, advised his students to keep in mind always the "paradoxical trinity" which determines the nature of any given war. "The first," he observed, "mainly concerns the people; the second the commander and his army; the third the government."² But of course strategists must keep in mind more variables than these.

Michael Howard, in a sweeping survey of "the way in which both strategic doctrine and warfare itself have developed over the past 200 years," suggests an improved framework for strategic analysis.³ This framework is constructed in the operational, logistical, social, and technological dimensions of warfare; and though Howard concentrates largely on the contemporary complications of nuclear strategic thinking, his framework offers an insight into the way conventional strategy ought most productively to be thought out. In this view, Western strategists "appear to be depending on the technological dimensions of strategy to the detriment of its operational [and logistical] requirements"--a view which suggests we re-examine how best to think about using advanced technology, and certainly the technology of maritime airpower, within the operational opportunities and logistical limitations we face.⁴

If we indeed view these four factors as "dimensions" of a kind, perhaps we ought to overlay them on another, simpler, and yet more immediate dimensional framework--a framework wherein strategy addresses a perceived threat in a received context. Any grand strategy, then, and certainly the maritime aspect of that strategy, is most productively viewed as an ongoing and self-correcting process rather than a published and pre-set product. As a process, it must vary across both space and time. First, it must be integrative

and progressive, responding to and taking advantage of geography. Second, it must be constructed within a timeframe, not only planning ahead but remaining flexible, anticipating change, and adapting early. And throughout, that strategic process must work to combine our strengths in order to counter most effectively the threats posed by our opponents, within the context of physical and political realities. Those threats and those realities will not be static, and we must continually revise our strategy to account for them. In effect, our strategy must continually re-examine the threat in context--and at present, the major threat is the Soviet Union.

As the Soviet Union continues to expand its Navy, the growing Northern Fleet presents a strategic threat to U.S. interests in the North Atlantic, and the Pacific Fleet to our Pacific sea lanes. In examining the long range problem of sea control in either area, land-based air could play a decisive role in keeping open these sea lanes.⁵ And that role is neither so simple nor so direct as specific sea lane patrol or convoy protection. Instead, a strategic framework flexible in both space and time will deal with what we project as the Soviet strategic vision, and will attempt to counter early and forward the moves that vision would recommend.

In the example of the North Atlantic sea lanes, Soviet strategy originates its thrust in the Barents and North

Norwegian Seas, operating out of naval and air bases on the Kola peninsula.⁶ Soviet interests in this northern maritime region are based first in a recognition that war with the U.S. is more than ever likely to be a protracted conventional conflict; and if the last two European wars teach strategists anything of continuing value, it is to prepare once again for a stalemate of continued, if relatively contained, violence.⁷

In order to support a prolonged war effort in Europe, the Russians must recognize that the U.S. will be forced once again to rely on North Atlantic shipping for from 80% to 90% of its resupply.⁸ Thus if the Soviets seek a strategic leverage over Allied forces, our center of gravity, or perhaps our weakest link, would be the extended sea link. Since North Atlantic shipping is accessible to the Northern Fleet only via the Norwegian Sea, a Soviet drive to control the sea lanes begins with sea control north of Norway.

Soviet maritime strategy is also defensive in this area, of course. First, the area is in the broadest sense their northern flank, which if held securely means a more certain offensive concentration on the Central Front.⁹

Second, the area is a vital SSBN bastion, holding at any given time between 60% to 70% of the Soviet SSBN fleet, along with the necessary surface and subsurface protection.¹⁰ Maintaining sea control here ensures the

safety of these strategic assets, which in turn ensures crucial leverage in the late stages of the war, whether in battle or at the bargaining table. And by the very threat they pose, these submarines likewise deter a U.S. first use of nuclear weapons, or at least an escalation to the intercontinental strategic level.¹¹

And third, the northern maritime region controls the most direct air approaches from North American bases to the Soviet heartland. Thus for the Soviets, sea and air control is doubly crucial here because of the U.S. Air Launched Cruise Missile (ALCM) capability, which allows our strategic bombers a healthy standoff range.¹² U.S. bombers could release their ALCMs while still over the North Norwegian Sea, relatively safe from land-based missile defense--certainly a Soviet strategic concern whether the threat is perceived as either nuclear or conventional. In either case, Soviet sea control of the Barents and Norwegian Seas plays an important role in strategic defensive considerations--which naturally counter U.S. offensive options throughout the region.

The inverse situation is perhaps more complicated, but it underlies the direction of current enunciations of U.S. maritime strategy. Here we must anticipate likely Soviet offensive patterns in order to prepare to counter them. A most likely pattern leads finally to the North Atlantic sea lanes, but it may well begin in Northern Norway as a

combined Soviet air, land, and sea attack. A Soviet success would deny Allied forces their air and naval bases, thus reducing the threat not only to the Kola, but to the Northern Fleet in the Norwegian and Barents Seas as well.¹³

And at its best, the attack might earn for the Soviets new air and sea bases which would extend the range both of bombers vital to sea lane and naval interdiction, and of Soviet interceptors as well. These fighters might well negate the Allied AWACS and ASW within their range, thus allowing Soviet naval bombers easier access not only to the Atlantic sea lanes, but to Allied bases and monitoring stations which constitute the defensive barrier across the Greenland-Iceland-United Kingdom gap. Soviet control of Northern Norway would also open a new angle of attack on North Sea shipping, and perhaps even more seriously, on Southern Norway, Denmark, and the Central Front.¹⁴ With air and sea attacks crippling our listening and fighting capabilities out of the U.K. and Iceland, the Soviets could more certainly degrade our undersea surveillance ability and move in force against the North Atlantic resupply lines through coordinated air, surface, and subsurface attacks.¹⁵

Such a strategy is progressive; and though the Soviets may harass trans-Atlantic shipping prior to controlling the Norwegian Sea, that control allows a confident movement in force against the only hope of success for the Allies in Europe. It is in fact a classic case of focusing on the

weak link; in Clausewitz's terms, of seeking and striking a center of gravity; and in Howard's terms, of devising an operational strategy designed to defeat a logistic strategy.¹⁶

In order to counter that operational strategy, the U.S. and its Allies must prepare to control the northern seas and the airspace over them. Whatever the theater, successful countermeasures require a comparable operational strategy designed to deter, de-escalate, defend, and destroy. To deter, we must appear capable of at least defeating a Soviet air-land-sea thrust, and possibly of badly injuring the Soviets in the process. To de-escalate, we must demonstrate that capability very early in the conflict. To defend our larger strategic interest in resupplying Europe, we must control the sea lanes, which implies at least controlling the air and sea access to those lanes, and at best destroying the threat.¹⁷ To destroy the Northern Fleet and its powerful naval air arm--that, of course, is not so simple.

In any operational strategy designed to destroy--or at least neutralize--the Northern Fleet, the first phase might begin with air control in the South Norwegian Sea. That air control would best be achieved with a blend of carrier and land-based air (including AWACS), which would ensure sea control, allowing in turn a combined air, surface, and subsurface hunt for Soviet SSNs.¹⁸ The second phase,

clearing the North Norwegian Sea, should follow the same pattern; but the task would be made more difficult if only because of the proximity to Soviet air based on the Kola.¹⁹ That very real Soviet defensive threat makes the interplay of allied sea and land-based air all the more urgent, both in defending surface ships and submarines from Soviet air attack, and possibly in attacking that Soviet air at its source.

This operational strategy, designed to counter an anticipated Soviet strategy, is in its details a product of the theater for which it is conceived. But the larger sense in which that strategy recognizes a potential weakness and orders an integrated maritime response, applies as well to other maritime theaters under a similar Soviet threat.²⁰

As a process, then, strategy must be integrative and flexible. In that sense it must efficiently unite our forces in responding to the inevitable changes in enemy capabilities and intentions; to the facts of attrition, logistics, and support from the home front (both material and moral); and even to technological and tactical innovation.

Beyond being flexible, however, strategy must also anticipate change. But its anticipations must not be written in steel. Instead, it should anticipate the inevitability of change within an efficient range of possibilities. While an active imagination might predict a

technological breakthrough so striking that piloted aircraft or the large aircraft carrier would no longer be useful, the efficient imagination will anticipate a reasonable increase in accuracy, speed, and distance capability of enemy weapons, as well as consequences believable in the light of historical example.

In World War II, for instance, the Japanese lost a vital portion of their fleet at Midway and suffered serious long-term effects. If the U.S. were to lose a significant portion of its carriers, or even of its carrier aircraft, in a modern Mahanian decisive sea battle, or even through a steady process of attrition to Soviet submarine and air attack, we will have lost a crucial component of maritime air control which is in turn vital to sea control. Should we lose that sea-based air, how would the U.S. adjust? Would our strategists have anticipated the possibility, and within the allowances of scarce resources, would they have provided ahead of time the grounds for a supplement to the reduced naval air?

We must anticipate not just changes in our own capabilities, but changes in our opponent's approach to the war as well. Karl Deutsch, for example, explains how in Russian chess theory,

once the Russian player has induced his adversary to commit his pieces to a particular position on the board, and to commit his mind to working out the possibilities of a particular kind of strategy, he is then advised according to this theory of chess, to make

a radical switch in strategy and to confront his opponent with a new set of problems for which his pieces are not effectively disposed and for which his mind is not prepared.²¹

We are best prepared to respond to such shifts, and indeed to the effects of friction in war, if we are not limited by iron-clad categories and pre-set patterns. Murray points out the difficulties Allied planners faced in adjusting to the unexpected realities of the World War II air war :

The serious questions that one can raise against those who led the air war against Germany does not deal with the evolution of doctrine and theory through 1939 but rather whether the leaders adapted their tactics, equipment, and strategy to the conditions of air war in Europe from 1939-43, or whether they allowed preconceived judgments to filter out reality until "Black Thursday" over Schweinfurt faced them with defeat.²²

In considering the strategic responsibilities of land-based air, then, the strategist must consider how we will meet an extended Soviet thrust to the Atlantic sea lanes with a significantly reduced carrier force, and as well a seriously attrited land-based air capability. Will our remaining sea and land-based air be effective in cooperating against attacks on shipping? Will our maritime air react effectively to shifts in Soviet strategy? Will Air Force aircraft have the weapons, and their pilots the training, to carry out open-ocean sea control missions? An effective strategy, insofar as it is a process, will not only ask

these questions, but in answering them, it will begin planning to overcome the potential obstacles they reveal.

CHAPTER V

THE NEED FOR STRATEGIC DOCTRINE

He who writes on strategy and tactics should force himself to teach an exclusive national strategy and tactics--which are the only ones liable to benefit the nation for whom he is writing.¹

Colmar von der Goltz, 1883

The principles of strategy are simple. Their application is immensely difficult. A strategic doctrine, necessary as it may be . . . can never be applied to all situations.²

Robert Strausz-Hupe, 1958

Calls for a more unified approach to U.S. strategic planning are hardly new. JCS reform, for example, is a popular topic and a likely prospect.³ And yet beyond the reformation of the JCS, some see a need for a new conceptual unity which would direct not so much the organizational decision-making process as the way in which we think about war, plan for war, and finally fight a war.

Doctrine is a word that means different things to different people. Within the U.S. military, this claim is no less true. Despite the JCS definition of doctrine as that set of "fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives,"⁴ doctrine in fact does differ from service to service. Why? These differences are due to the simple fact that we have no central doctrine, or doctrinal

agency, from which all subsequent doctrine flows. And as the services and commands devise strategies for dealing with threats to U.S. interests, they find no underlying doctrine expressing the central tenets of U.S. grand strategy or national military strategy. Because both our political and military systems ensure a constant turnover in leadership and high-level staff personnel, we lack consistency over time and across the services in considering the direction of our force planning, the composition of our forces, and the thrust of our strategy. This lack of consistency breeds fragmentation and feeds a factionalism which is not in the national interest.

Why then should we establish a joint strategic doctrine, a doctrine which would underlie and unite the individual service doctrines, and which would bind together into a common framework all service and command strategic thinking? The need grows out of the increasing strength of our opposition, the increasing speed and complexity of battle, and the decreasing resources available to our military.

First, joint strategic doctrine would serve as a hedge against the steadily increasing strength of our opposition, or what Komer terms a "decline in relative U.S power."⁵ High levels of Soviet military spending over the last decade have given them a consistent quantitative edge, as well as a qualitative comparability in many areas. And these gains

are matched by technological innovations both in weapons systems and in command, control and communications systems.⁶ Whether such Soviet innovations were internally developed or externally appropriated is of little consequence to the planner who must prepare to counter them.

Perhaps more threatening is the fact that the Soviets themselves continue to move in the direction of strategic refinement, both in terms of geographic planning and integrated operations.⁷ Soviet Admiral Gorshkov, for example, in the latest edition of his Sea Power and the State, stresses the importance of thinking about maritime and continental strategies as a unified military strategy.⁸ (Corbett would have been pleased.) This may be a healthy development for the Soviets; but we cannot afford to allow the Soviet concept of teamwork, whether in the strategy planning session and on the battlefield, to be stronger than ours.⁹

Second, joint strategic doctrine would help us deal more effectively with the increased speed and complexity of modern warfare. Although in some ways war has not changed since Clausewitz's time, in many significant ways it has. Reaction times are shorter, distances are much less limiting, systems are far more complicated (at both the technological and organizational levels), and the possibilities and consequences of Clausewitzian friction are correspondingly greater.¹⁰

Third, a unified strategic framework would help us transcend the limitations of decreasing resources. Spending cuts are unavoidable across the services, even as we encounter a steadily increasing variety of demands. And even more important is a potentially debilitating shift in our national economy away from the industrial depth and flexibility which have allowed us such strategic resilience in past wars. Where, for example, would we get the steel we would need in a long war? We no longer have the broad industrial self-sufficiency which would allow us to retool quickly for the mass production of tremendous numbers of tanks, ships, and aircraft in a relatively short time. Because of the degree to which we have lost that capacity, joint strategic thinking, and the efficient joint operational capability which would result, is truly a matter of national survival.

Rather than accept and in fact encourage a system wherein each branch of the service is left to decide whether or not it wishes to commit to writing its fundamental beliefs governing the use of its forces in war, the Department of Defense, and most probably the Joint Chiefs of Staff, should recognize the importance of a central underlying doctrine which frames the way all U.S. forces think about strategy, whether operational strategy or logistical strategy. This strategic doctrine should be broad enough to give rise to the maritime, continental, and

aerospace aspects of U.S. strategy; and it should make inevitable as well the geographical and chronological integration of those subsidiary strategies.

One vital aspect of that strategic doctrine will be the priority it places upon unity of response to a given threat in a given context, rather than upon the service or the primary medium through which our forces operate. The emphasis must be on unity of command under the CINC, rather than unity within a service branch.¹¹ Thus when we plan for maritime operations, joint operations are necessarily implied. And in those maritime operations, land and sea-based air are naturally called upon to accomplish whatever is necessary within their overlapping capabilities, without regard to separate service traditions, terminologies, and rivalries.

Admiral Wylie has studied what he identifies as "three generally recognized major theories of war strategy": the continental, the maritime, and the air theories.¹² Wylie is particularly perceptive in identifying these as "theories of war strategy," rather than strategies. We do not truly have three strategies, but rather three theories of strategy, which are actually separate strategic doctrines. Out of these general theories we have from time to time constructed different strategies stressing the doctrinal aspects of in one case air power, in another case sea power, and in the third case land power. It is because each theory

of strategy, each strategic doctrine, is substantially valid within its area of control, says Wylie,

that there are such marked and sometimes heated arguments between their proponents. The airman proposes his course of action in full confidence that he is right, and he then assumes in extension that his action is the best. The soldier, in the same fashion, offers his opinion and his proposal in the soldier's confidence that his answer is the best one. At the same time the sailor watches these two in a sort of aggravated frustration, unable to understand why neither of the other two can see that the sailor's answer is the best of the three.¹³

The problem arises when each doctrine is treated by its proponents as a general theory of warfare; in fact, however, none of the three is truly general strategic doctrine. What would general strategic doctrine have to be like, then, to satisfy the demands of our national defense requirements? First, it would have to apply to any type of conflict; it would have to apply under the limitations of the situation that actually exists; it would have to encompass and integrate the truths of our three current strategic doctrines; and it must not be so vague as to be useless in helping our planners evolve strategies to meet actual threats in real physical contexts.¹⁴

Over the past ten years, we have seen several positive movements in the direction of strategic integration, the AirLand Battle and the Maritime Strategy being two of the most publicly recognizable. The first, as its title explicitly states, recognizes the essential requirement of air power and land power, of Air Force and Army, fighting

with their forces fully integrated in a large-scale continental war.¹⁵ And the second does demand strengthened "partnerships with the Air Force, Army, and Coast Guard in the planning, exercising, and executing of joint operations."¹⁶ But still, these two "strategies" are independently derived; and even at a simple if subtle semantic level they display their separate service orientations, rather than a common origin in a foundational strategic doctrine which is truly national and integrated.

The Maritime Strategy, for example, is referred to as "the naval component of the National Military Strategy."¹⁷ By Corbett's quite reasonable definitions of "maritime" and "naval," the current description is incorrect and thus misleading. Maritime strategy is that portion of national military strategy governing a war in which the sea is a substantial factor, and naval strategy is a part of maritime strategy.¹⁸ The logistical aspect of national maritime strategy resides in part in the Merchant Marine, the Air Force, and even our commercial air capability. The political aspect resides in our relationships with friendly and neutral maritime powers such as Japan, Norway, Iceland, and Sweden, and in a larger sense within our Pacific and Atlantic alliances. And as we have seen, even the operational aspect of national maritime strategy resides in part in the ability of the Air Force's land-based air to influence air control and sea control.

The Air Force, too, needs to review its doctrinal foundations with respect to an integrated national strategic doctrine. Having traditionally expounded "Unity of the Air," having pressed for unity of command based on medium of action, and having identified "aerospace power as an indivisible entity" in AFM 1-1, the Air Force has prompted protective reactions in the other services. A careful reading of AFM 1-1 will show a strong and consistent emphasis in theory on integrated land, sea, and air actions; but that emphasis clashes with the claim that an air commander's "guiding principle is to employ aerospace power as an indivisible entity."¹⁹ Again, the subtle linguistic message stresses unity of medium based in the historically received strategic doctrine of air power, over unity of an integrated response to a threat in context.²⁰ And again, we see evidence of the need for a joint strategic doctrine which would ensure the smooth integration of the separate service doctrines and the strategies to which they give rise.

The problem has its immediate consequences, too. Komer points out the waste which results from such fragmentation:

At present, when the JCS rightly complain about the "mismatch between strategy and resources," their solution is either to duck resource allocation issues or (amounting to the same thing) to call for enough added resources to execute the same old multifront, multiservice strategy which results from splicing together individual service desires. As a result, we have more like four service strategies or, more accurately in some cases, strategic doctrines. The

navy institutionally focuses on command of the seas, the marine corps jealously fights for amphibious assault, the air force stresses victory through air power (independent if possible), and the army (spread thin over a variety of commitments with a low priority for modernization) looks to mobilizing large forces for sustained overseas campaigns. General E.C. Meyer, when a sitting member of the JCS, found these differences "so wide as to question whether we are pursuing any strategy at all."²¹

If we are to solve the particular problem of equipping and training our Air Force pilots to fly and fight in a maritime environment, signing bilateral agreements and forming operational doctrine working groups are important first steps. But the benefits of such actions will be limited unless they are backed by a broad, general theory of national military strategy, a joint strategic doctrine to which all the services subscribe and which unites them in a common vision of the national defense.

CHAPTER VI

CONCLUSION

War is no time for experimentation.¹

Admiral Stephen B. Luce, 1910

The crying need today is for . . . brilliant strategists, not of land power, not of sea power, and not of air power, but able broad-gauged individuals who can view the whole picture of military strategy.²

Admiral C.R. Brown, 1949

Through their Memoranda of Agreement, and at the operational level, the Air Force and the Navy are actively working toward a higher degree of integration. Such cooperation is certainly in the best interests of the national defense.

While this progress is promising, we must realize that our Air Force commanders and pilots should eventually feel as confident in fighting the maritime battle, as they presently do in fighting the airland battle. For our land-based pilots to fully understand and in fact master this maritime responsibility, they must recognize from the foundational level, from the level of national strategic response to threat in context, that their maritime roles are natural and vital; that Navy and Air Force compliment each other in constructing and implementing national military strategy, and its maritime, continental, and aerospace

emphases; that maritime strategy is not "the Maritime Strategy," is not naval strategy, and is not separate from published aerospace doctrine; but rather that land-based air plays a vital role in the maritime aspect of national military strategy, just as it does in the continental aspect.

Without moving to a purple suit or grossly restructuring the organization of the U.S. military, a unification of doctrine must bring with it the following specific changes, which in the long term would improve our ability to prepare and fight together as a team, rather than as several teams in a loose coalition:

1. Commissioning sources must concentrate on developing in the officer candidate an attitude which values interservice teamwork above traditional rivalries. This attitude would be based in instruction in the theory and practice of service integration; exposure to the methods and traditions of the other services; and an increased institutional exchange of officer candidates, faculty, and military training staff. Because this attitudinal change is a long-term need, it must start in the earliest stage of professional education.

2. Professional military education within the officer corps must consist of a more substantial mix of same service and joint service schooling, ranging from the tactical and operational subjects to the joint strategic level. While

the degree of integration will differ according to the school level, it must begin at the junior level. And certainly it must culminate in the Senior Service School, where a significant portion of the curriculum should deal with strategy and policy as a historical and theoretical subject of global and national military scope.

3. War gaming must become more prevalent and more thoroughly integrated. We stand to gain by interfacing the various service games so that each exercise exposes its players, in as realistic a manner as possible, to the opportunities and problems of integrated operations.

4. Joint assignments and cross-service assignments must become more regular, more acceptable, and more rewarding--not only in terms of experience, but of promotability as well.

5. Joint operational doctrine teams must increasingly focus on integrating among the services their differing operational and technological capabilities. And within each area of operational integration, a regular review process must ensure feedback on team results.

6. Training and exercising in joint operations must be as realistic and thus as unpredictable as possible. Thus integrated exercises ought not to be the exception, but the rule. The CINCs must ensure that under the pressures of real war, the services can continue to operate together without a hitch. Rather than focus on several massive

exercises each year during which land-based air coordinates with carrier battle groups, the services should build in the requirement and the capability for normal operational ties at all times--even when not involved in a joint exercise. If in peacetime we build the ability to communicate and cooperate, then in wartime we can depend upon those abilities.

7. Exercise evaluations must emphasize continually improving interservice teamwork and productive reactions to fluid friction situations, not merely unit performance and adherence to standards.

8. Service teams must write and rewrite individual service doctrines and strategies to follow from joint strategic doctrine, stressing each service's contribution based not on separate unities of sea or land or air, but on genuine unity--our ability to defeat a threat by working jointly through all three media in concert.

9. National defense planners must develop rich global and then theater strategies for national defense based upon a linkage of ends and means moderated by threat in context--not by the capabilities and needs of service branches, budgets, and weapons systems. They should also strive for a heightened development of long-term contingency thinking which asks "What happens if . . . ?" and which probes the ground between traditional service responsibilities. The shift to joint strategic thinking will be a slow process,

but it will only occur if based in a fundamental re-evaluation of our national military strategic framework, which itself grows out of a clear enunciation of a unified strategic doctrine.

If we are to construct a general theory of strategy which encompasses the more particular theories of land, sea, and air strategy, the impetus for that theory must come from on high. This is not a plea to the Almighty, but rather a recognition that only within the office of the Commander in Chief can such a movement begin. Joint strategic doctrine which stresses an integrated approach to warfare, and which will serve as a foundation for subsequently revised service doctrines, can be successfully written only at the direction of the President.

Can a formal document which describes a theory of national military strategy, which stresses not operational principles or mission definitions but rather strategic principles--can such a document help promote that much needed unity of integrated response? Can it promote a higher degree of Air Force-Navy cooperation, which in turn would lead to a more effective approach to the uses of land-based air within a national maritime strategy? Yes, it can. And the answer is not only that it can, but that in an increasingly complex and threatening world, it must.

NOTES

Chapter I

1. Henry E. Eccles, Military Power in a Free Society (Newport, RI: Naval War College Press, 1979), p. 142.
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3. Bradley, p. 21.
4. Eccles, p. 61.

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1. Alfred Thayer Mahan, Naval Strategy (Boston: Little, Brown and Co., 1911).
2. See Peter M. Swartz, "Contemporary U.S. Naval Strategy: A Bibliography," U.S. Naval Institute Proceedings, January 1986, pp. 41-47, for a topical and chronological review of the printed exchanges.
3. Julian S. Corbett, Some Principles of Maritime Strategy (London: Longmans, Green and Co., 1918), p. 21.
4. Corbett, p. 13.
5. See Edward Wegener, "Theory of Naval Strategy in the Nuclear Age," U.S. Naval Institute Proceedings, May 1972, p. 205. Rear Admiral Wegener, Federal German Navy (Ret.), represents a quite opposite view: "Maritime strategy should however be considered as part of naval strategy, as a lesser order of naval strategy."
6. Corbett, p. 8.
7. John B. Hattendorf, "Sir Julian Corbett on the Significance of Naval History," The American Neptune, October 1971, p. 281. "In reaching this conclusion," Hattendorf states, "Corbett was not attempting to destroy the arguments in favor of naval power; on the contrary, he was demonstrating very precisely that the navy could not operate in a vacuum."
8. Corbett, p. 87.

9. Corbett, p. 90.
10. Corbett, p. 8.
11. William Mitchell, Winged Defense: The Development and Possibilities of Modern Air Power--Economic and Military (New York: G.P. Putnam's Sons, 1925), pp. 56-76. The phrase "Aircraft Dominate Seacraft" was so descriptive that used it to title the chapter describing his maritime bombing experiments.
12. Mitchell, pp. 125-126.
13. H.W. Richmond, Seapower in the Modern World (London: Bell, 1934), p. 117; cited in Geoffrey Till, Maritime Strategy and the Nuclear Age (New York: St. Martin's Press, 1982, p. 60.
14. L.W. Martin, The Sea in Modern Strategy (London: Chatto and Windus, 1967), p. 10; cited in Till, p. 88.
15. Till, p. 186.
16. Stansfield Turner and George Thibault, "Preparing for the Unexpected: The Need for a New Military Strategy," Foreign Affairs, Fall 1982, p. 123.
17. Turner, p. 130.
18. Turner, p. 125-130.

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1. Sergei G. Gorshkov, The Sea Power of the State (London: Pergamon, 1979).
2. U.S. Air Force Dept., Basic Aerospace Doctrine of the United States Air Force, Air Force Manual 1-1 (Washington: 16 March 1984), Chapter 3, "Missions and Specialized Tasks."
3. Telephone conversation with LtCol Bob Gaskin, Plans and Programs Officer, Air Force Doctrine and Concepts Office, HQUSAF/XOXID, 13 May 1986. A special Joint Doctrine working group is currently negotiating the proposed JCS publication entitled "Doctrine for Joint Maritime Operations, (Air)." This publication will include a listing of "Operations" comparable to the "Missions" of AFM 1-1. Because some titles and definitions are still being hammered out between the services, the document is at present unavailable for comment.

4. Basic Aerospace Doctrine of the United States Air Force, p. 3-2.

5. Williamson Murray, Luftwaffe (Baltimore: The Nautical and Aviation Publishing Company of America, 1985), p. xiv.

6. Thomas A. Fabyanic, letter to General Leaf, 3 October 1984. On the subject of revisions to AFM 1-1, Fabyanic suggests we "erase the artificial distinction we make between strategic and tactical war."

7. U.S. Navy Dept. and U.S. Air Force Dept., Memorandum of Agreement on Joint USAF/USN Efforts to Enhance USAF Contribution to Maritime Operations (Washington: 2 September 1982). See also Memorandum of Agreement on Joint USN/USAF Efforts for Enhancement of Joint Cooperation (Washington: 25 October 1982).

8. See Thomas L. Wilkerson, "Two If By Sea," U.S. Naval Institute Proceedings, November 1983, p. 37.

9. P.X. Kelley, "The Amphibious Warfare Strategy," U.S. Naval Institute Proceedings, January 1986, pp. 18-29. While extolling Navy-Marine cooperation, the article does not deal with the possibility of Air Force assistance in mounting an amphibious attack.

10. Wilkerson, p. 37.

11. Thomas Bradley, The Use of Air Power in Joint Maritime Operations (Maxwell AFB, AL: Air University Press, August 1985), pp. 79-80. Bradley reports from U.S. Congress, Department of Defense Appropriations for 1984--Part 2 (Washington: 1984), p. 88, on the testimony of the Air Force Chief of Staff: "The F-15s and the AWACS will give cover to the Navy wherever they need it. We are working those plans. We practice it in the Pacific and in the Atlantic all the time now and in the Med and Indian Ocean."

12. John Lehman, quoted in Congress, p. 494; from Bradley, p. 81.

13. See Edward Luttwak's suggestion in "On the Meaning of Victory," The Washington Quarterly, Autumn 1982, p. 24.

14. Bradley, pp. 76-79, covers the history of the Busy Observer program and mentions some of the studies done on Air Force sea surveillance in the mid-1970s.

15. See Ned Nelson, Improving SAC's Sea Surveillance Capability (Maxwell AFB, AL: 1976); James Katzaman, "Sea Spy in the Sky," Airman, July 1983, pp. 41-44; Walter Crusberg, The Use of the F-111 from Tactical Air Command in a Sea Surveillance Role (Maxwell AFB, AL: 1976); Don Badgwell, A History of Air Force Planning for Support of the Maritime Surveillance and Control Mission (Maxwell AFB, AL: 1976); and Douglas Mitchell, "Potential Maritime Roles for U.S. Strategic Bombers" Congressional Research Service, 29 March 1982.

16. See G. Skinner, "Aerial Minelaying: Possibly the Most Potent Sea Warfare Technique of the U.K.," Journal of the Royal United Services Institute, December 1981, pp. 57-61; and C.T. Horne III, "New Role for Mine Warfare," U.S. Naval Institute Proceedings, November 1982, pp. 34-35. Bradley, pp. 69-72, covers more of the technical details of USAF/USN cooperation on aerial minelaying since 1971.

17. Wilkerson, p. 37.

18. Skinner, p. 60.

19. Bradley, pp. 72-76, discusses the B-52's use of Harpoon missiles, and the questions surrounding the maritime role of the B-1B. See also Thomas A. Keaney, Strategic Bombers and Conventional Weapons: Airpower Options (Washington D.C.: National Defense University Press, 1984), especially Chapter 2, "Maritime Employment," pp. 31-45; Douglas D. Mitchell, "Potential Maritime Roles for U.S. Strategic Bombers," Congressional Research Service, 29 March 1982, p. 9; and B.J. Galloway and Mark B. Hemphill, "The Harpoon at Loring," Combat Crew, May 1985, p. 9.

20. Memorandum of Agreement, 9 September 1982, p. 2.

21. Memorandum of Agreement, 25 October 1982, p. 1.

22. Bradley, p. 76, reports that the services are slow in producing "a multi-service War-at-Sea range located in the vicinity of South Florida," which was specifically called for in the 25 October MOA.

23. See David K. Hall, "An Assessment of the JCS as an Advisory and Decisionmaking Institution," JCS Reform, ed. Steven T. Ross, (Newport, RI: Naval War College Press, 1985), pp. 42-43.

24. Bradley, p. 83.

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1. Carl von Clausewitz, On War, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1984), p. 119. Clausewitz continues: "The difficulties accumulate and end by producing a kind of friction that is inconceivable unless one has experienced war. . . Friction is the only concept that more or less corresponds to the factors that distinguish real war from war on paper."
2. Clausewitz, p. 89.
3. Michael Howard, "The Forgotten Dimension of Strategy," Foreign Affairs, Summer 1979, p. 975.
4. Howard, p. 986.
5. For an intriguing look at the possibilities of land-based air used in defense of the North Atlantic sea lanes, see Deborah Shapley, "New Study of Land-Based Aircraft Questions Need for Aircraft Carriers," Science, 2 June 1978, p. 1024.
6. John M. Collins, U.S.-Soviet Military Balance: Concepts and Capabilities 1960-1980 (New York: McGraw-Hill, 1980), pp. 331-336.
7. Stansfield Turner and George Thibault, "Preparing for the Unexpected: The Need for a New Military Strategy," Foreign Affairs, Fall 1982, p. 125.
8. Tomas Ries, "Defending the Far North," International Defense Review, July 1984, p. 875.
9. John M. Collins, U.S.-Soviet Military Balance 1980-1985 (Washington: Pergamon-Brassey's, 1985), p. 145.
10. Ries, p. 874.
11. Ries, p. 875.
12. Collins (1985), p. 145.
13. Ries, p. 877.
14. Ries, p. 878.
15. Collins (1980), p. 255.
16. Howard, pp. 976-977.

17. Shapley, p. 1024.
18. James D. Watkins, "The Maritime Strategy," U.S. Naval Institute Proceedings, January 1986, especially pp. 7-13, makes clear the crucial nature of the antiair campaign in seizing the initiative.
19. Ries, p. 876.
20. See for example Sylvester R. Foley, Jr., "Strategic Factors in the Pacific," U.S. Naval Institute Proceedings, August 1985, pp. 34-38.
21. See Karl Deutsch, The Nerves of Government: Models of Political Communication and Control (London: Free Press of Glencoe, 1963), pp. 61-62; cited in Henry E. Eccles, "Strategy: The Essence of Professionalism," Naval War College Review, December 1971, p. 49.
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4. U.S. Joint Chiefs of Staff Publication 1, Department of Defense Dictionary of Military and Associated Terms (Washington: U.S. Govt. Print. Off., 1979), p. 113.
5. Robert W. Komer, Maritime Strategy or Coalition Defense? (New York: University Press of America, 1984), pp. 12-15.
6. See Donald Madill, "The Continuing Evolution of the Soviet Ground Forces," Military Review, August 1982, pp. 52-68.
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